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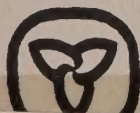
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MINISTRY OF ENVIRONMENT AND ENERGY

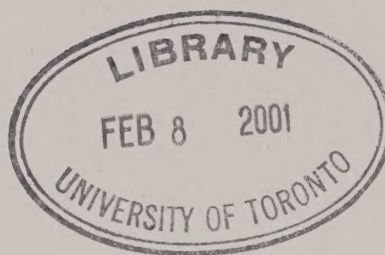
GUIDELINE FOR PREPARING ENVIRONMENTAL ASSESSMENTS

Mandated Technical and Information Requirements



Ontario

December 1994



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by

**The Ontario Ministry
of The Environment**

Dear Environmental Assessment Proponent:

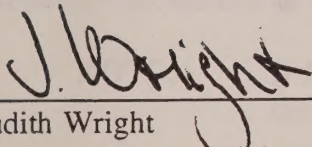
I am pleased to announce the release of the "Ministry of Environment and Energy Guideline for Preparing Environmental Assessments - Mandated Technical & Information Requirements". The guideline assists proponents in preparing EAs by providing guidance and clarity on MOEE's technical and information requirements.

This guideline is part of the Ministry's continuing administrative Reform to improve Ontario's EA process. It is one in a series of mandate guidelines which the Environmental Assessment Branch is co-authoring with key provincial ministries who participate as regulatory authorities and government reviewers of environmental assessments.

The guideline was prepared by the Environmental Planning and Analysis Branch with the assistance of the Environmental Assessment Branch, the Approvals Branch, the Environmental Sciences & Standards Division, the Policy Division, and the Operations Division of MOEE.


This guideline is a "first generation" document which will be reviewed after one year of circulation. The Environmental Bill of Rights Registry and the one year trial use period will be simultaneous. We encourage proponents to utilize this guideline. If you require further information regarding this guideline, please contact the Environmental Planning & Analysis Branch at (416) 440-3778. If you have questions or comments regarding the Administration of the Environmental Assessment Act, please contact the Environmental Assessment Branch at (416) 440-3450.

Yours sincerely,



Judith Wright
Assistant Deputy Minister
Conservation & Prevention Division
Ministry of Environment & Energy

Ministry of Environment & Energy
Approvals Branch Library



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Executive Summary

The Ministry of Environment and Energy performs two separate roles in the environmental assessment process.

- i) The *Environmental Assessment (EA) Branch* is responsible for administering the Environmental Assessment Act (EA Act) and ensuring that the proponent meets the requirements of the EA Act. An Environmental Assessment Branch Review Coordinator is assigned for each project which is subject to the EA Act. For more information on the role of the *EA Branch*, please call (416) 440-3450.
- ii) The balance of the MOEE is involved in the EA process by ensuring that proponents' EAs adequately consider the other legislative, policy and program areas of the Ministry. This is known as the Ministry's technical review and is based on the requirements of the Environmental Protection Act, the Ontario Water Resources Act, the Pesticides Act, and the Ministry of Energy Act; and accompanying regulations, technical procedures and guidelines.

MOEE technical participation in a proponent's EA process is coordinated by a Technical Review Coordinator from either the *Approvals Branch* or the *Environmental Planning and Analysis Branch*. MOEE Regional, District and Head Office participation in the pre-submission consultation process, and the review of both Draft and Formal EA submissions, is facilitated through the Technical Review Coordinator.

The MOEE Technical Review Coordinator submits MOEE's corporate position on an EA to the EA Branch Review Coordinator, who in turn coordinates all public and agency comments on the EA document.

This guideline focuses on how proponents should address MOEE's technical requirements. The guideline documents MOEE's technical information requirements, typical concerns, and the technical review process. It is expected that this guideline will assist proponents with the preparation of their EAs, contribute to improved EAs and a more cost-effective process, and expedite MOEE's technical review of EAs by clearly identifying what information proponents should provide in their EA documentation.

This guideline is considered to be a "first generation" document, with a review and updating process scheduled for the end of the first year of release.

NOTE: If further information is required concerning this Guideline, please contact the Environmental Planning and Analysis Branch, MOEE at (416) 440-3778.

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MINISTRY OF ENVIRONMENT AND ENERGY GUIDELINE FOR PREPARING EAs

Mandated Technical and Information Requirements

1.0 INTRODUCTION

1.1 Provincial Guideline Series

The *Ministry of Environment and Energy Guideline for Preparing EAs -- Mandated Technical and Information Requirements* is one in a series of guidelines written by Provincial Ministries, outlining their environmental assessment (EA) requirements. The guidelines are intended to provide greater certainty for proponents preparing environmental assessments.

This Guideline describes the mandated technical and information requirements of the Ministry of Environment and Energy (MOEE). By clearly understanding these requirements at the outset, proponents will be able to address MOEE's technical requirements prior to the submission of a final EA. MOEE considers the same technical areas when reviewing projects carried out under approved parent Class EAs.

Proponents should contact the *Environmental Assessment Branch* at the beginning of their planning process, and before input is sought from government agencies, to confirm that the proposal is subject to the Environmental Assessment Act (EA Act).

This Guideline was prepared by the *Environmental Planning and Analysis Branch* with the assistance of the *Environmental Assessment Branch*, the *Approvals Branch*, the *Environmental Sciences and Standards Division*, the *Policy Division*, and the *Operations Division* of MOEE.

1.2 Purpose of the Guideline

The purpose of this guideline is to outline the Ministry's mandated technical and information requirements to proponents preparing EAs.

This guideline is not intended to serve as a substitute for consultation with the MOEE Technical Review Coordinator. Rather, the intent of the guideline is to familiarize proponents with the Ministry's technical areas of interest.

This guideline:

- i) provides an overview of the Ministry's mandate, legislation, guidelines and procedures, areas of shared responsibility, and organizational structure;
- ii) describes the role of the Technical Review Coordinator, the importance of pre-submission consultation, information the MOEE may be able to provide, and the technical review process; and
- iii) informs proponents of the Ministry's various technical and information requirements.

1.3 Review Carried Out Under the Environmental Assessment Act

The Environmental Assessment Act provides for the protection, conservation and wise management of the environment in Ontario by establishing a responsible and accountable process of decision-making. The term "EA" refers to both the **process** of identifying and evaluating the alternatives, and the **document** which describes the process resulting in the selection of the proposed undertaking. The EA is subject to public, government and agency review before a decision on the

approval of the undertaking can occur. Proponents are prohibited from proceeding with the undertaking and obtaining approval under other legislation, until approval under the EA Act is granted. However, approval under the EA Act does not preclude the need to obtain required approvals under other Acts. The consultation process undertaken with the MOEE during the preparation of an environmental assessment will assist in identifying and addressing the technical requirements of MOEE's subsequent approvals.

The EA Act requires the preparation of a Review for each EA. The Ministry's *Environmental Assessment Branch* is responsible for writing the Review. The Review evaluates the strengths and weaknesses of both the proponent's planning process and the undertaking, as described in the EA document. As stated previously, government agencies, municipalities, the public and others participate in the review process. The Ministry's coordinated technical review of an EA document is forwarded to the *EA Branch* for inclusion in the Review. An acceptable environmental assessment must address the relevant technical interests of, among others, the MOEE.

Based on the proponent's EA, the Review, and public comment, the Minister makes a decision on whether or not to approve the undertaking, or to require a hearing by either the EA Board or a Joint Board under the Consolidated Hearings Act. The duplication of public hearings can be avoided, by conducting joint hearings under the Consolidated Hearings Act.

2.0 MINISTRY OF ENVIRONMENT AND ENERGY - OVERVIEW

2.1 Ministry Mandate

The mandate of the Ministry of Environment

and Energy is to protect the quality of the natural environment (including air, water, and land) so as to safeguard the ecosystem and human health; coordinate the government's energy supply and demand-related activities; and foster the efficient use and conservation of resources.

2.2 MOEE Legislation

The EA Act is administered by the *Environmental Assessment Branch* of MOEE. The submission of an Environmental Assessment is a requirement of the EA Act.

The mandate for the Ministry's technical review of environmental assessments is primarily derived from four other Acts, and their respective regulations, as described below:

The Environmental Protection Act (EPA) provides for the protection and conservation of the natural environment by controlling the discharge of contaminants in amounts in excess of those prescribed in the regulations. This legislation allows MOEE to regulate issues related to air quality, noise, waste management, spills, and private sewage. The control of discharges to the environment is partly achieved through requirements for Certificates of Approval for facilities discharging contaminants.

The Ontario Water Resources Act (OWRA) provides for the protection of the quantity and quality of groundwater systems; the protection and enhancement of surface water quality; the control of the development of water supply systems, including the taking of water, and sewage works. It is through the OWRA that the MOEE issues Certificates of Approval for communal water treatment and distribution systems, and wastewater collection and treatment systems.

The Pesticides Act controls the use of chemicals for the destruction of plant and animal pests, and the licensing of exterminators.

The Ministry of Energy Act mandates the Ministry to review energy matters with regard to both short-term and long-term goals in relation to the energy needs of the Province. This Act also mandates the Ministry to make recommendations for the effective coordination of all energy matters within the Government of Ontario.

MOEE is also responsible for other statutes as listed in Appendix 1. However, the MOEE technical review of EAs is not based on these other pieces of legislation.

2.3 MOEE Guidelines and Procedures

In addition to the statutes described in Section 2.2, and their regulations, the MOEE articulates its objectives through a broad range of policies, guidelines and procedures. Information directed at the protection of the environment is contained in MOEE's **Manual of Guidelines and Procedures**.

A list of governing documents (including guidelines and procedures) is provided in Appendix 1.

2.4 Shared Responsibilities

To achieve its goals, the Ministry works closely with other Ministries in administering joint policies and participating in review processes under other provincial legislation.

MOEE reviews land use plans to promote compatibility between adjacent land uses, and ensure consistency with Ministry goals. This is done as part of the Ministry of Municipal Affairs' (MMA) land use plan review process.

The Ministry also works closely with the

Ministry of Natural Resources (MNR) in areas of wetland protection, watershed planning, stormwater management, water quality and energy initiatives.

As well, MOEE and the Ministry of Agriculture, Food and Rural Affairs (OMAFRA) work together to address agricultural drainage and land use compatibility issues.

Because of these areas of shared responsibility, proponents should also refer to the guidelines in this provincial series outlining MMA, MNR, and OMAFRA EA requirements.

2.5 Organizational Structure of MOEE

Appendix 2 provides an organization chart for the Ministry, and describes the roles of the Divisions and Branches involved in the technical review process. Appendix 3 contains a map of the MOEE Regional boundaries.

3.0 THE TECHNICAL REVIEW PROCESS

3.1 Technical Review Coordinator

The Ministry's technical review of EAs is coordinated by one of two Branches, depending upon project type. The *Approvals Branch* coordinates the technical review of environmental assessments related to water supply, sewage works, and waste management undertakings. The *Environmental Planning and Analysis Branch* coordinates the technical review of environmental assessments on all other undertakings, including transportation, parks, and electricity generation and transmission projects.

Proponents should contact either the *Environmental Planning and Analysis Branch* or the *Approvals Branch* of MOEE, depending on project type, early in their planning process once the proponent has determined that the

project requires an individual EA. Once the first contact is made with either the *Approvals Branch* or the *Environmental Planning and Analysis Branch*, a Technical Review Coordinator will be identified.

All contact between the proponent and MOEE, except for EA administrative matters, is facilitated by the identified Technical Review Coordinator. The Technical Review Coordinator will ensure that the various interests of the Ministry are conveyed to the proponent and that the technical reviewers within the Ministry are kept informed of the progress of the project throughout the planning phases. The Technical Review Coordinator will ensure that a consistent corporate approach is taken with respect to the Ministry's participation in all phases of the proponent's planning process, from early in pre-submission consultation to the review of the formally submitted EA.

Appendix 4 provides a listing of Ministry contacts.

3.2 Pre-submission Consultation

Pre-submission consultation (PSC) represents an essential phase in a proponent's EA planning process. PSC is the process of consulting with affected parties, including the technical reviewers of MOEE, before the EA is formally submitted.

The PSC process helps the proponent focus the EA on the important issues and concerns. In this way, the MOEE technical concerns can be satisfactorily addressed before the proponent formally submits the EA to the Minister. The Ministry strongly encourages proponents to prepare and submit a Draft EA so issues can be resolved prior to formal submission of the EA. MOEE will review and comment on the final draft of an EA to ensure regulatory compliance and identify sections requiring

more detail. It is, however, the proponent's responsibility to ensure that the draft EA submitted for Ministry review is complete.

The Ministry can often assist the proponent by providing background environmental information. Section 3.3 of the Guideline outlines the assistance the Ministry can provide.

All PSC discussions relating to the Ministry's technical mandated areas of interest are coordinated through the appropriate Technical Review Coordinator. This provides proponents and others with consistent advice and complete information on technical areas of concern.

3.3 Information Availability

The Technical Review Coordinator can assist proponents by providing a broad range of information on technical matters. The MOEE Technical Review Coordinator will direct the proponent to various areas of the Ministry, where guidance on the following may be available:

- prediction models, field measurements, and monitoring programs;
- MOEE legislation and regulations;
- interpretation of standards, guidelines and procedures;
- data collection;
- report format; and
- other possible sources of information.

MOEE may also be able to assist proponents by providing the following information:

- past reports and studies conducted in the study area;
- complaint history;
- data on air quality including emission estimates;
- data on surface and groundwater quantity and quality, including existing

- usage, discharges, and well records;
- existing cost of power;
- existing contamination & spills information;
- location of waste sites, waste generators, PCB sites, organic soil conditioning sites; and
- possible disposal sites for soils.

3.4 Technical Review Process

Upon receiving an Individual EA from the *Environmental Assessment Branch*, the MOEE Technical Review Coordinator examines the EA document to determine which technical groups within the Ministry should review the EA document. The appropriate MOEE Head Office Branches, and Region are circulated the EA for their review and comment within an established time frame. These offices review the EA document to determine if it has adequately considered the Ministry's legislative, policy and program areas. The comments of Regional and District staff are coordinated at the Regional Office before being forwarded to the Technical Review Coordinator.

The Technical Review Coordinator coordinates the comments from the Head Office Branches and the Region(s) into the corporate Ministry technical position. The Technical Review Coordinator investigates, clarifies, and facilitates the resolution of any conflicting comments before finalizing the corporate position.

Once completed, the MOEE corporate technical position on the formal EA is sent to the *Environmental Assessment Branch*. These comments are included in the Review, along with comments received from other reviewing ministries and agencies.

Draft EAs and formal EAs are reviewed using the same technical criteria. However, the

circulation process is different in that the proponent submits the Draft EA directly to the Technical Review Coordinator, and the Ministry's coordinated technical position is provided directly to the proponent.

4.0 INFORMATION REQUIREMENTS

4.1 Initial Information Requirements

To enable the Ministry to understand the nature and scope of the proposed EA planning process, the proponent should contact either the *Approvals Branch* or the *Environmental Planning and Analysis Branch*, depending on project type, upon commencement of the EA planning process. The following information should be provided as a minimum:

- map of the study area (use a suitable map scale depending upon the type of undertaking);
- general description of the environment;
- description of the objectives of the study (this may include a conceptual description of the undertaking);
- contact person for the study;
- MOEE offices that the proponent has consulted with respect to the undertaking (past or present);
- expected schedule of the study;
- description of any known or potential effects to the environment that may result from particular requirements of the proposal; and a
- copy of the Environmental Assessment Proposal (EAP) for the project, if applicable, or notification of sectoral EAP to be followed.

4.2 The Role of Ecosystem Principles in Environmental Assessment

Ecosystem principles recognize that human health and welfare ultimately depend upon a healthy ecosystem, and that humanity is part of this interconnected, interdependent

ecosystem. The MOEE encourages proponents to incorporate ecosystem principles in their decision-making when conducting environmental assessments.

Ecosystem principles recognize that the biophysical environment is a complex, integrated, and interdependent system. Because of this interdependence, the health of the ecological systems can be adversely affected by changes in any part of the system. For example air emissions can lead to the deposition of pollutants that can alter soil and water chemistry. This in turn can adversely affect soil and water organisms. Undertakings can adversely affect groundwater recharge and flow. This can lead to groundwater depletion and the lowering of water tables, which can adversely affect vegetative growth, baseflows in streams, and the availability of groundwater for human consumption. Other factors impacted by groundwater change could include fish habitat, loss of species, and loss of biodiversity.

Ecosystem principles also need recognition with mitigation measures. Measures to mitigate the adverse effects on one component of the environment can cause problems for another. For example, channelizing a watercourse to control erosion can eliminate fish habitat and cause downstream erosion and flooding.

Ecosystem principles should be used in evaluating cause and effect relationships between the proposed undertaking and the biophysical environment. Environmental assessments should recognize the structural and functional relationships among air, land and water. Ecosystem principles can assist proponents in their selection of mitigation measures and in the determination of advantages and disadvantages to the biophysical environment.

Biophysical boundaries may be more meaningful than political or administrative boundaries for the assessment of biophysical effects. The use of watershed boundaries is often recommended because the hydrologic (water) cycle is a pathway that integrates the ecosystem's physical, chemical and biological processes.

At the outset of planning, proponents should recognize MOEE's commitment to the maintenance or restoration of natural ecological processes and biological diversity. Proponents could reflect this by identifying the boundaries of the ecosystem(s) which may be affected by their proposed undertaking. Proponents should carefully define their study area as the undertaking could impact on resources outside of the immediate project area.

Proponents are encouraged to refer to the following documents to gain a better understanding of ecosystem-based planning:

- i) *Toward an Ecosystem Approach to Land Use Planning* (MOEE, September 1992);
- ii) *Water Management on a Watershed Basis: Implementing an Ecosystem Approach* (MNR and MOEE, June 1993);
- iii) *Subwatershed Planning* (MNR and MOEE, June 1993); and
- iv) *Integrating Water Management Objectives into Municipal Planning Documents* (MNR and MOEE, June 1993).

4.3 General Considerations

Generally, when reviewing EAs, MOEE will:

- examine the validity of the baseline data to ensure that the data was gathered over an appropriate period of

time and provides useful biophysical information;

- evaluate the completeness and accuracy of information and calculations in the EA;
- confirm the potential for adverse effects;
- determine if the proposed mitigation seems feasible and adequate;
- determine if the adverse effects will be adequately addressed;
- verify the assumptions made;
- evaluate how the proponent interpreted the data;
- evaluate the impact predictions made and the implications of the residual impacts that are anticipated;
- evaluate the validity of the proponent's conclusions; and
- confirm that MOEE goals and objectives will be met over the long term.

4.4 Specific Information Requirements

This section outlines information that MOEE requires in an EA document and provides guidance on how this information should be used to generate and evaluate alternatives. The MOEE Technical Review Coordinator may be able to offer further guidance regarding specific information requirements once the proponent has confirmed site specific aspects of the project. The level of detail of information required by MOEE may vary with the nature of the undertaking and the potential effects on MOEE areas of interest.

4.4.1 Air

Reductions in air quality may lead to adverse effects on humans, human health, and the ecosystem. Therefore, the Ministry is concerned with the effects that a project will have on the local air quality (e.g. ground level ozone and smog effects, air toxins, and odour, dust and smoke nuisance effects) as well as

broader air quality issues (e.g. long-range transport, acid rain, global warming, and stratospheric ozone depletion). The proponent must comply with the regulatory requirements for any air emissions and the proposed control measures to meet those requirements.

The degree and significance of air quality impacts may be gauged by the predicted level of contaminants downwind of the undertaking, when compared to the air quality standards. Interim standards, objectives, and the total loadings to the environment must also be addressed.

Evaluation of Alternatives

When screening alternatives, proponents should compare the relative impact for each alternative, taking into consideration the pollutants that may be emitted and, where applicable, their potential impact on:

- global warming;
- stratospheric ozone depletion;
- smog and ground level ozone formation potential;
- air toxins; and
- nuisances such as dust and odour.

The analysis of the alternatives should include:

- the relative emission from each alternative;
- a relative comparison of impacts; and,
- a prediction of each alternative's likely contribution to global warming, stratospheric ozone depletion and ground level ozone.

Preferred Alternative/the Undertaking

The proponent should consider, in consultation with MOEE, the need to conduct a dispersion modelling study on the preferred alternative. The resulting information will be used to determine the likelihood of complying with

MOEE's current Summary of Points of Impingement Standards, Ambient Air Quality Criteria (AAQCs), and Approvals Screening Levels (ASLs).

The analysis of the preferred alternative should consider:

- existing ambient air quality;
- existing odour, dust and other nuisance complaints;
- any contaminants and nuisance compounds released by the undertaking;
- modelled downwind air quality data, and/or observed data from other similar undertakings;
- a comparison of downwind contaminants concentration data to ambient air quality concentration limits;
- an evaluation of odour and dust impacts; and
- mitigative and operating measures to eliminate any air quality problems.

In summary, for concerns related to "air" the EA should describe:

- relevant background information on the existing air quality;
- the emission inventory for the study area, including wet and dry deposition rates;
- surrounding, existing and committed land uses (i.e. possible impacted receptors);
- broader air quality issues relative to the project study area;
- predicted air emissions and their impacts;
- how air impacts were used to evaluate alternatives; and
- mitigation of adverse effects.

4.4.2 Water

Formulation of watershed and subwatershed management goals begins with ensuring legislative requirements are achieved. Tailoring of these prevention statements to a particular ecosystem should be based on standards, guidelines and plans. Releases of contaminants, and changes to the hydrologic cycle or flow regimes can adversely affect the aquatic environment and the achievement of these water-related goals.

Specifically, controlled and uncontrolled releases of contaminants can degrade the quality and quantity of surface and ground water, and cause adverse effects for human health, the ecosystem (including aquatic life), and water users (e.g. drinking water, industrial use, recreation, etc).

Physical, chemical, temperature, and geomorphological changes can degrade surface water quality. Furthermore, the withdrawal of groundwater or the creation of physical changes to the aquifer can affect the availability of groundwater for users, and/or the level of baseflows in surface watercourses.

The significance of water-related impacts is measured by their effects on the usefulness of the resource, and on the achievement of the watershed and subwatershed management goals.

Evaluation of Alternatives and Preferred Alternative/the Undertaking

The proponent must understand the water-related context in which the project is being planned. This context is defined by:

- water and watershed management goals;
- past, existing and committed land uses in the area affected by the alternatives under consideration;

- existing and committed uses of the water resources;
- surface water that could be affected by the alternatives, including its chemistry, hydrology, and biology; and the
- hydrogeological environment, including the geology and how the groundwater relates to this geology.

Proponents should use the pertinent watershed and subwatershed management plans when defining this context.

Where a project is proposed in an area where a watershed management plan does not exist, or where an outdated plan may require upgrading, a proponent should use a watershed management approach to describe the area. This involves consulting with MOEE staff to enable the proponent to assemble the pertinent watershed and subwatershed aquatic resource management information. This information should then be used to guide the data collection and analysis for the specific project. This should be done in enough detail to allow for an evaluation of the level of impact that might occur.

Where groundwater impact is possible, hydrogeological investigations should be used to define the physical and chemical hydrogeology most likely to be impacted by the undertaking. These may involve both intrusive (drilling and sampling) and surface (remote sensing - geophysics) investigations. The studies must define the subsurface conditions in enough detail to predict the main contaminant migration pathways, potential receptors, future boundary impacts, and expected contaminant attenuation capacities.

The proponent should produce alternative scenarios, such as varying siting and timing options, which may in turn reduce the degree and significance of adverse effects. These

alternatives should be compared on the basis of how well they achieve the water/watershed management goals for the study area.

The expected cause and environmental effect relationships should be evaluated using ecosystem principles. The Ministry may require the proponent to collect original data to demonstrate that significant adverse effects will not occur.

In summary, for concerns related to "water" the EA should describe:

- the watershed and/or subwatershed context for the EA as outlined above;
- reasonable alternatives;
- positive and negative effects the alternatives could have on the water and watershed management goals, including methodologies used; and the
- mitigating measures to be used to reduce adverse environmental effects.

When reviewing the water related aspects of an EA, MOEE will:

- evaluate the adequacy of the EA in the context of the water/watershed management goals as articulated through various regulations, standards, objectives, policies, guidelines and plans.

This evaluation may include:

- an evaluation of the completeness and accuracy of information and calculations;
- an assessment of consistency with the goals of the applicable Watershed/Subwatershed Plans if any;
- an assessment of the consistency with other water-related objectives, and standards; and

- a comparison of the development assumptions to those articulated in local Official Plans and Official Plan Amendments.

To ensure consistency, MOEE may consult with other agencies such as MNR and the Conservation Authorities.

4.4.3 Soil

Contaminated soils can cause adverse effects on human health and the ecosystem. As well, the presence of contaminated soils or municipal waste can cause significant problems and costs for proponents. Therefore, proponents should identify contaminated soils and landfills during the planning process, and factor the remediation costs into the evaluation of alternatives.

Evaluation of Alternatives

In the case of linear facilities (e.g. transportation, power lines, pipelines), it is not practical to determine the potential for site contamination for all lands associated with each alternative. However existing and closed landfills and any former industrial lands affected by the alternatives should be identified.

In the case of non-linear undertakings, the proponent should determine the nature and extent of site contamination, as well as proximity to existing landfill sites.

Preferred Alternative/the Undertaking

The degree and significance of impact should be assessed on the basis of MOEE's Decommissioning Guidelines and Ministry procedures and regulations. Where it is necessary to characterize contamination, bulk analysis is required. The chemical results are compared with the requirements of the Decommissioning Guidelines. Where contaminated soils may have to be disposed

of, a leachate analysis is required (O.Reg 347).

Where contamination is encountered, it will need to be properly managed. Mitigating measures may include soil remediation, landfill avoidance, or excavation and disposal. If there is the potential for contaminated sites to be encountered during construction, proponents may need to monitor for contaminated soil during excavation activities to ensure proper disposal.

In summary, for concerns related to "soil" the EA should describe:

- the nature and extent of site contamination;
- the history of the site and an environmental audit;
- waste streams that are generated by the undertaking;
- fuel handling sites and staging areas related to the construction and operation of the undertaking; and
- the proposed method for managing wastes so as to comply with the regulations and ensure protection of the environment.

When reviewing the soil component of EAs, MOEE will:

- assess the potential soil contamination based on site history and environmental audit information provided;
- verify the location of landfill sites and PCB sites;
- verify spills information;
- compare chemical information to the Decommissioning Guidelines and Ministry policies;
- assess the validity of the proponent's method of managing contaminated soils; and
- assess the validity of the proposed

methods of managing wastes generated by the undertaking.

their feasibility, with respect to land use compatibility.

4.4.4 Land Use Compatibility

Conflicts often occur as a result of locating incompatible land uses adjacent to one another. To assess land use compatibility, proponents should address the nature and extent of contaminants emitted by an undertaking, and the potential adverse effects these may have on adjacent land uses. The EA should describe:

- existing (ambient) and historic environment with respect to air quality, land (contamination, erosion, sedimentation, presence of deposited waste) and water quality and quantity (surface & ground water);
- existing, committed, and future land uses in the influence area of the project, to provide an understanding of the potential conflicts between the proposed undertaking, and adjacent sensitive land uses; or the location of existing and committed facilities which may impact upon the undertaking;
- previous uses of the land to allow for an understanding of the possibility of encountering abandoned landfills, or contaminated soils;
- discharges and other compatibility concerns (e.g. visual impacts with landfills) which might cause adverse effects on the undertaking or other land uses, for the alternatives under consideration;
- the degree of impact (i.e. "significant" or "trivial" as defined in Procedure D-1-1, of MOEE's Manual of Guidelines and Procedures);
- the nature and feasibility of mitigating measures to minimize or prevent impacts on nearby land uses; and
- compare the alternatives on the basis of

4.4.5 Noise and Vibration

The MOEE is concerned with the adverse impacts undertakings will cause to sensitive land uses through increased levels of noise and vibration. The Ministry's objective is to achieve compliance with applicable noise and vibration standards. For some types of undertakings, these standards have been set out in protocols or guidelines (see Appendix 1). Where these do not exist for the type of undertaking under consideration, the objective is for the noise and vibration levels from the undertaking not to exceed the existing ambient noise and vibration levels.

Noise impact is related to the background noise levels that existed prior to the proposed undertaking being built (i.e. ambient noise level). In those instances where the ambient level is determined by road noise, the ambient can be predicted using the Stamson noise prediction model. Where this is not the case, the ambient level must be determined using other accepted methods. Existing rail and aircraft noise are not to be included in the calculation when determining ambient noise levels.

Vibration impact is assessed by absolute limit criteria.

Evaluation of Alternatives

When dealing with "Alternatives To" the undertaking the EA need only identify the sources and receptors of noise and vibration in broad terms. Detailed discussion is required when noise and vibration is considered to be a critical factor when deciding amongst these broader alternatives.

When dealing with "Alternative Methods" of carrying out the undertaking the EA should

provide detailed information on the predicted impact on sensitive receivers in the proximity of the alternatives.

For vibration, the EA should determine the level of vertical vibration velocity at sensitive receptors, and use this to assess alternatives.

Preferred Alternative/the Undertaking

To properly assess impacts, sensitive land uses and their proximity to the noise and vibration source must be described in the EA.

Adverse impacts should be mitigated to achieve compliance with the applicable limits. Noise and vibration impacts can be reduced through application of physical measures and/or administrative and organizational procedures.

In summary, for concerns related to "noise and vibration" the proponent should:

- determine the background sound levels (ambient);
- predict the impacts at the receptor resulting from the undertaking; and
- identify mitigating measures (i.e. their description, feasibility, and acoustical effectiveness), when impacts exceed the applicable guideline limits.

4.4.6 Energy

The Ministry encourages greater energy efficiency and conservation and increased use of renewable energy sources. When reviewing the energy component of EAs, the Ministry will compare the undertaking to existing policies within the government's energy framework.

Specifically, when reviewing the energy component of EAs on electricity projects, the Ministry will assess the validity of: the forecasting information; and the conclusions

regarding the cost of power, the security of supply, the reliability of the supply, and the adequacy of supply mix.

For non-electricity projects (e.g. transportation, municipal waste, and sewage undertakings), the Ministry will: assess whether the potential for energy conservation and efficiency has been considered; and for waste disposal and sewage projects, assess whether methane management issues have been addressed.

4.5 Presenting the Information

The environmental assessment document should provide reviewers with enough information to ensure that the areas of interest have been adequately addressed. By doing so, proponents are more likely to have their proposal reviewed in a timely fashion.

Section 4.4 described the type of considerations that should be addressed in an EA. This information should be presented in a way that allows the reviewer to follow the logic of the proponent's decision-making process.

The process of environmental assessment involves a systematic search for a preferred alternative from a range of options. The EA should describe how the information presented in Section 4.4 was used in generating and evaluating the various alternatives considered, and in selecting the preferred alternative.

It is important that the EA provide a clear description of the undertaking. It is also important that the EA provide a clear description of the land use and environmental setting for the area affected by the undertaking and its alternatives. This description must include all facilities, such as access roads or utility corridors, associated with the proposed undertaking. The description must include all activities which will be generated by the

undertaking.
As discussed in Section 4.2, an understanding of the interaction between the activities being considered by the proponent and the ecosystem is important to properly evaluate the environmental assessment.

The EA document should describe not only how the various alternatives under consideration might affect the environment and land uses in the areas, but also how such land uses might affect the undertaking. This impact analysis should be presented in a balanced way, addressing both positive and negative implications.

Where negative effects are predicted, the EA should describe how these effects will be mitigated, and comment on the net effects.

The EA should clearly state the proponent's conclusions about the impacts that the undertaking is likely to have on the environment and adjacent land uses; the impact the environment and land use interests are likely to have on the undertaking; and what measures the proponent plans to take in response to the identified impact.

4.6 Examples of Monitoring & Contingency Planning

Generally the Ministry requires monitoring and contingency planning as part of post-EA approvals such as the Certificate of Approval process required under the EPA and the OWRA. Since monitoring and contingency plans are often related to detailed design issues that are dealt with after the EA approvals process, they may not be specifically described in the EA. However, the EA should acknowledge the need for monitoring and contingency plans and describe these plans in general terms.

The proponent should commit to monitoring

specific mitigation measures to ensure the mitigation adequately addressed the environmental effect. The Ministry may also be involved in construction and post-construction monitoring to ensure mitigation is operating effectively.

Specific types of monitoring and contingency planning that may be required by the Ministry are described below.

Air

Depending upon the undertaking, MOEE may require continuous air emission monitoring; routine ambient air quality monitoring; stack sampling; bio-monitoring programs; and/or process monitoring and the keeping of maintenance logs.

Air monitoring and/or reporting is to ensure equipment is functioning properly and therefore meeting the air quality objectives. Proponents are required to notify the Ministry of any discharges that exceed the levels prescribed by the Ministry.

As well, contingency plans may be required to respond to planned and unplanned releases resulting from equipment maintenance or failures.

Noise and Vibration

Generally monitoring of noise & vibrations is not required. However, where there is the potential for the mitigated impacts to exceed the applicable limits, a monitoring program may be requested.

Water

Although not usually required, proponents are generally encouraged to include monitoring programs in their EA that would ensure ongoing compliance with standards and water/watershed goals.

Monitoring may be required to demonstrate continuous compliance with policy and standards, or to verify impact predictions.

Soil

Where there is the potential that contaminated sites may be encountered, proponents may need to monitor for contaminated soil during excavation activities to ensure proper disposal. A proponent must ensure, where applicable, that all four phases of the decommissioning and clean-up are conducted, as outlined in the "Decommissioning and Clean-Up Guidelines." A contingency plan for dealing with hazardous materials encountered during construction may be required. There may also be a requirement to report on the disposal of excavated materials. Where excavated material is determined to be an industrial waste or a hazardous industrial waste, the proponent may be required to obtain a generator registration number.

5.0 CONCLUSION

The Ministry of Environment and Energy has two separate roles in the environmental assessment process. The *EA Branch* is responsible for administering the Environmental Assessment Act and ensuring that the proponent meets the requirements of the Act. The balance of the Ministry is involved in the EA process by ensuring that proponents' EAs adequately consider all other legislative, policy and program areas of the Ministry. The Ministry's technical review of proponents' EAs is based primarily on the Environmental Protection Act, the Ontario Water Resources Act, the Pesticides Act, and the Ministry of Energy Act; regulations under those acts; and, technical procedures and guidelines.

The MOEE technical participation in a proponent's EA process is facilitated by one of two Branches. The *Approvals Branch* coordinates MOEE's technical review of EAs related to water supply, sewage works, and waste management. The *Environmental Planning and Analysis Branch* coordinates the Ministry's technical review of EAs on all other types of undertakings, including transportation, parks, and electricity generation and transmission projects. A Technical Review Coordinator is designated to coordinate MOEE's technical involvement in a project. MOEE Regional, District and Head Office participation in the PSC process, and the review of both Draft and Formal EA submissions, is facilitated through the Technical Review Coordinator.

In order to assist proponents with the preparation of their EAs, this Guideline documents MOEE's information requirements and typical concerns, and outlines our internal technical review process.

It is expected that this guideline will contribute to the production of better and more cost-effective EAs, and shorten EA reviews by clearly identifying how proponents should address MOEE requirements. It is anticipated that through this guideline the proponent will be able to better focus the EA on issues most critical to the decisions being made.

APPENDIX 1

GOVERNING DOCUMENTS

APPENDIX 1

GOVERNING DOCUMENTS

The following information may be available at these locations:

Public Information Centre
Ministry of Environment and Energy
1st Floor, 135 St. Clair Avenue West
Toronto, Ontario M4V 1P5
1-800-565-4923 or (416)323-4321

Government of Ontario Bookstore
Main Floor, 880 Bay Street
Toronto, Ontario M7A 1N3
(416) 326-5320

LEGISLATION

The Ministry's technical review of EAs is based primarily on the following four statutes:

Environmental Protection Act (EPA)

Provides for the protection and conservation of the natural environment by controlling the discharge of contaminants in amounts in excess of those prescribed in the regulations. It is through this legislation that MOEE is mandated to consider air quality, noise, waste management, spills and private sewage issues. The control of discharges to the environment is partly achieved through requirements for Certificates of Approval for facilities discharging contaminants.

Ontario Water Resources Act (OWRA)

Provides for the protection of the quantity and quality of groundwater systems; the protection and enhancement of surface water quality; the control of the development of water supply systems (including the taking of water), and sewage works. It is through the OWRA that the MOEE issues Certificates of Approval for communal water treatment and distribution systems, and wastewater collection and treatment systems.

Pesticides Act

Provides for the control of the use of chemicals for the destruction of plant and animal pests, and the licensing of exterminators.

Ministry of Energy Act

Mandates the Ministry to review energy matters with regard to both short-term and long-term goals in relation to the energy needs of the Province. This Act also mandates the Ministry to make recommendations for the effective coordination of all energy matters within the Government of Ontario.

The Ministry is also responsible for other statutes, however, the Ministry's technical review of EAs is not based on the following:

The Environmental Assessment Act (EA Act) provides for the protection, conservation and wise management of the environment in Ontario by establishing a responsible and accountable process of decision-making.

The Niagara Escarpment Planning and Development Act (NEPA) provides for the maintenance of the Niagara Escarpment, and land in its vicinity, substantially as a continuous natural environment. The Act ensures that only developments that are compatible with the natural environment are permitted to occur. The Niagara Escarpment Plan enables the Minister or his designate, namely the Niagara Escarpment Commission, to issue development permits within the Niagara Escarpment Plan Area. Undertakings located within the Plan Area, for which an EA Act approval is required, must also obtain a development permit under the NEPA before proceeding. An EA Act approval does not guarantee that a NEPA development permit will be issued. The Niagara Escarpment Commission reviews EA documents independently of the Ministry.

Energy Efficiency Act

Environmental Bill of Rights Act

Ministry of the Environment Act

Ontario Energy Board Act

Ontario Energy Corporation Act

Ontario Waste Management Corporation Act

Power Corporation Act

Power Corporation Insurance Act

Rural Hydro-Electric Distribution Act

Rural Power District Loans Act

Waste Management Act

Consolidated Hearing Act

REGULATIONS

All regulations are available from the Government of Ontario Bookstore. The regulations listed below are those which most often apply to the technical review of EAs.

Regulations Under the Environmental Protection Act

Air

Reg. 337 - Ambient Air Quality Criteria

This regulation lists ambient Air Quality Criteria for a number of chemicals.

Reg. 346 - General - Air Pollution

The purpose of this regulation is to prescribe the appropriate level of air contaminants through emission control. It also briefly addresses the Air Pollution Index.

Reg. 355 - Ontario Hydro

This regulation outlines acid gas emissions for Ontario Hydro.

Reg. 356 - Ozone Depleting Substances - General

Regulation 356 details the prohibitions, exemptions and emission standards for ozone depleting substances.

Reg. 361 - Sulphur Content of Fuels

This regulation pertains to the sulphur content in fuels. It details the maximum sulphur content allowed in fuels.

Waste

Reg. 347 - General - Waste Management

Regulation 347 pertains to waste, waste management and waste disposal sites. The regulation addresses the following: standards for waste disposal sites; standards for waste management systems; management of asbestos; generator registration; manifests; incinerators; refrigerant waste; and selected waste depots.

Reg. 362 - Waste Management - PCB's

This regulation describes the proper management of PCB's, PCB waste and PCB related waste by owners or handlers of PCB's, as well as PCB waste disposal sites.

Septics

Reg. 358 - Onsite Sewage

Pertains to onsite sewage disposal and provides standards for the construction of sewage systems.

Regulations Under the Niagara Escarpment Planning and Development Act

Reg. 828 - Development Within the Development Control Area

This regulation outlines exemptions from development control within the Development Control Area of the Niagara Escarpment Plan.

PROVINCIAL PLANS

Niagara Escarpment Plan

GUIDELINES AND PROCEDURES

Detailed descriptions of Ministry guidelines and procedures are found in the "Manual of Guidelines and Procedures" (MOEE) which is available from the Ministry's Public Information Centre (416) 323-4321 or 1-800-565-4923.

Guidelines are referenced by codes of the type G-1, with the alphabetical character signifying the chapter in the Manual to which the guideline belongs.

Procedures usually support specific guidelines. Procedures include the Ministry's technical and operational manuals. Lengthy manuals are not directly included in the Manual of Guidelines and Procedures and can be obtained from the Government of Ontario Bookstore. The procedures are referenced by codes of the type G-1-1, thus signifying the guideline to which they relate.

Air

A-1 *Combustion and Air Pollution Control Requirements for New Municipal and Biomedical Waste Incinerators*
Establishes design and operating parameters for efficient combustion in incinerators. Addresses air emission control for incinerators and establishes emission limits. All new incinerators, burning domestic, biomedical, commercial and/or non-hazardous wastes, must have installed a state-of-the-art pollution control system. Enforcement is through conditions on a Certificate of Approval.

A-1-1 *Source Testing Code*
This document outlines methods for stack testing of emissions. It is available from the Science and Technology Branch, Environmental Sciences and Standards Division.

General Information, Certificates of Approval (Air), Approvals Branch, August 1993
This guidance document provides information on the approval requirements and procedures relating to air emissions. This document is available from the Approvals Branch, Operations Division.

Guidance for Incinerator Design and Operation, Volume 1, General, December 1988 (Reprint Feb. 1992)
This document provides general information on incineration. This document is available at the Science and Technology Branch, Environmental Sciences and Standards Division.

Guidance for Incinerator Design and Operation, Volume II, Biomedical Waste Incinerators (Oct. 1986)

This document provides general information on Biomedical Waste Incinerators. This guidance manual is available from the Science and Technology Branch, Environmental Sciences and Standards Division.

Guide for Assessing Methane Hazards from Landfill Sites

This document addresses the possible hazards caused by methane from landfill sites, as well as control and abatement systems. This document is available from the Science and Technology Branch, Environmental Sciences and Standards Division, and the Approvals Branch, Operations Division.

Interim Design and Review Guide for Wood Fired Combustors

This document outlines performance standards for wood fired combustors.

Interim Guide to Estimate and Assess Landfill Air Impacts, October 1992

This document establishes procedures of how to estimate and assess landfill air impacts. This document is available from the Science and Technology Branch, Environmental Sciences and Standards Division.

Specifications and Testing Procedures for Continuous Emission Monitoring of Total Hydrocarbons and Carbon Monoxide at Biomedical Waste Incinerators, 1988

This document establishes specifications and testing procedures accepted by MOEE for the monitoring of total hydrocarbon and carbon monoxide emissions from Biomedical Waste Incinerators. It is available from the Science and Technology Branch, Environmental Sciences and Standards Division.

Summary of Point Impingement Standards, Ambient Air Quality Criteria (AAQC) and Approvals Screening Levels (ASL's), August 1992

This document lists the standards and emission levels for point impingement, ambient air quality and approvals screening. This summary is available from the Standards Development Branch, Environmental Sciences and Standards Division.

Water

B-1 *Water Management - Guidelines and Procedures of the Ministry of Environment and Energy (Guideline Summary)*

To ensure the effective management of the Province's water resources, the following goals, guidelines and procedures contained in Procedure B-1-1: "Water Management -- Guidelines and Procedures of the Ministry of Environment and Energy", and summarized in this guideline shall be adhered to.

B-1-1 *Water Management -- Guidelines and Procedures of the Ministry of the Environment and Energy ("The Blue Book")*

Available from the Program Development Branch, Environmental Sciences and Standards Division.

B-1-2 Revised Tables and Objectives for Ministry of Environment and Energy's Publication "Water Management"
Available from the Program Development Branch, Environmental Sciences and Standards Division.

B-1-3 Protection and Management of Aquatic Sediment Quality in Ontario
Available from the Program Development Branch, Environmental Sciences and Standards Division.

B-1-4 Fill Quality Guidelines for Lakefilling in Ontario
Available from the Program Development Branch, Environmental Sciences and Standards Division.

B-2 Surface Water Quality Management - Deviations
Elaborates on MOEE's practice concerning deviations from Surface Water Quality Management "POLICY 2 -- AREAS WITH WATER QUALITY NOT MEETING THE OBJECTIVES" as described on page 14 of the publication "Water Management - Guidelines and Procedures of the Ministry of Environment and Energy ("The Blue Book")" excerpts of which appear as B-1 of the Manual.

B-3 Resolution of Well Water Quality Problems Resulting from Winter Road Maintenance
Provides guidance to MOEE staff, road maintenance authorities and the public in the interpretation, implementation and application of cost-sharing arrangements for situations where restoration of groundwater supplies is required as a result of winter road maintenance by a road authority.

B-4 Snow Disposal and De-Icing Operations in Ontario
The purpose of this guideline is to minimize the environmental impact of snow collection and disposal practices and de-icing operations. Guidance is provided to staff of the Ministry and road maintenance agencies.

B-4-1 Procedures for Snow Disposal and De-Icing Operations in Ontario (1975)
Contains detailed information on Guideline B-4.

B-5 Drinking Water Quality
Addresses the protection and enhancement of drinking water quality and are intended to protect public health and encourage the provision of aesthetically pleasing water. The quality of drinking water shall conform to the limits described in Procedure B-5-1 except where indicated otherwise. Where the quality of drinking water is within provincial limits, every effort shall be made to maintain or improve that quality.

B-5-1 Ontario Drinking Water Objectives
Available from the Program Development Branch, Environmental Sciences and Standards Division.

- B-6** *Evaluating Construction Activities - Gas/Oil Transmission Pipelines Crossing Watercourses*
Provides guidelines for evaluating potential adverse effects and for planning adequate mitigative measures during the crossing of watercourses by pipelines.
- B-6-1** *Evaluating Construction Activities Impacting on Water Resources (1994)*
Contains detailed information on Guideline B-6 and its implementation. This document is available from the Program Development Branch, Environmental Sciences and Standards Division.
- B-7** *Incorporation of the Reasonable Use Concept into MOEE Groundwater Management Activities*
This guideline establishes the basis for determining the "reasonable use" of groundwater on property adjacent to sources of contaminants and for determining the levels of contaminant discharges considered acceptable by the Ministry.
- B-7-1** *Determination of Contaminant Limits and Attenuation Zones*
This procedure contains the technical details necessary for the application of the reasonable use approach described in Guideline B-7.
- B-7-2** *Procedure for Applying Guideline B-7 to Large Subsurface Sewage Disposal Systems*
- B-8** *Evaluating Construction Activities - Highways and Bridges*
This guideline addresses water resource concerns related to the construction of highways and bridges and is for use in the environmental impact assessment process by proponents and Ministry staff. Detailed information on this guideline is contained in the Ministry Procedure B-6-1, "Evaluating Construction Activities Impacting on Water Resources (1994)".
- B-9** *Resolution of Groundwater Interference Problems*
This guideline is intended to facilitate implementation of the groundwater quality management guidelines as found in Procedure B-1-1. This guideline describes the Ministry position in dealing with the abatement of groundwater contamination caused by activities that are not being carried out under a Certificate of Approval issued by the Ministry.
- B-9-1** *Resolution of Groundwater Quality Interference Problems (revised 1993)*
- B-10** *Evaluating Construction Activities - Marine Construction Projects*
This guideline applies to construction projects in any surface waters. It was developed for use in the environmental impact assessment process by proponents and Ministry staff. The intent is to provide assistance both in anticipating potential impacts and planning adequate mitigative measures. Detailed information on this guideline is

contained in Procedure B-6-1, "Evaluating Construction Activities Impacting on Water Resources (1994)".

- B-11 Evaluating Construction Activities - Small Scale Construction Projects*
This guideline addresses water resource concerns related to small-scale construction projects. Detailed information on this guideline is contained in Procedure B-6-1, "Evaluating Construction Activities Impacting on Water Resources (1994)".
- B-12 Potable Water Storage Structures*
Details the requirement of covers for potable water storage structures.
- B-13 Treatment Requirements for Municipal and Communal Waterworks Using Surface Water Sources*
Describes the treatment the Ministry requires at municipal and communal waterworks using surface water as a source for potable water supplies.
- B-13-1 Granting a Variance from the Treatment Requirements for Municipal and Communal Waterworks Using Surface Water sources*
- B-13-2 Guide for Applying for Approval of Municipal and Private Water and Sewage Works*
This document is available from the Program Development Branch, Environmental Sciences and Standards Division.
- B-14 Treatment Requirements for Municipal and Communal Waterworks Using Groundwater Sources*
Describes the treatment the Ministry requires at municipal and communal waterworks using groundwater as a source for potable water supplies.
- B-14-1 Granting a Variance from the Treatment Requirements for Municipal and Communal Waterworks Using Groundwater Sources*
- B-14-2 Design of Water Supply Systems for Small Residential Developments*
This document is available from the Program Development Branch, Environmental Sciences and Standards Division.

Draft Municipal MISA Regulations

These regulations describe industrial sewer abatement in regards to the model Sewer Use By-law that is used as a standard for Municipal Sewer Use By-laws. It is available from the Approvals Branch, Operations Division.

MISA Industrial Stormwater Control Study Guideline (1994)

MISA Industrial Stormwater Control Study Protocol

Interim Stormwater Quality Control Guidelines for New Developments

This document was created to address the need for stormwater quality management in new developments. This is available from the Approvals Branch, Operations Division.

Stormwater Best Management Practices (MOE June 1991)

The purpose of this document is to justify the implementation of urban water quality controls, assess any associated potential negative impacts and integrate their selection/design with the existing erosion and water quality criteria, as well as the current planning process. It is a starting point for BMP design. This publication is available from the Program Development Branch, Environmental Science and Standards Division.

Stormwater Management Practices Planning and Design Manual (June 1994)

The manual complements the "Stormwater Best Management Practices" (June 1991) by detailing the more technical aspects of urban water quality controls. It is available from the Program Development Branch, Environmental Science and Standards Division.

Urban Drainage Design Guidelines (1987)

This document was prepared to assist the development of industry, municipalities, Conservation Authorities and other agencies in addressing stormwater drainage designs for new urban development. This guideline is available at Regional Offices, Operations Division.

Erosion and Sediment Control Guidelines for Construction Sites (1987)

This guideline is intended to aid designers and administrators with the implementation of erosion and sediment control measures. This document is available from the Regional Offices, Operations Division.

Pesticides

B-15 *Use and Storage of Pesticides at Waterworks*

This guideline seeks to control the use of pesticides at waterworks in the interests of protecting potable water supplies. It supports Guideline B-5. This guideline does not apply to materials used in the treatment of water to achieve and maintain potability.

Waste

C-1 *Mandatory or Discretionary Hearings on Waste Disposal Sites*

Describes when Hearings on Waste Disposal Sites are either mandatory or discretionary under Sections 30 and 32, Part V of the Environmental Protection Act.

C-3 *Approval Responsibilities for Waste Disposal*

Defines the approval responsibilities for waste disposal applications. This guideline informs applicants which official of the Ministry is responsible for the review of, and decision on, the issuance or refusal of a waste disposal Certificate of Approval. Technical details regarding the approval or organic soil conditioning sites are provided in Procedure C-3-1: "Sewage Sludge Utilization on Agricultural Lands" and Procedure

C-3-2: "Utilization of Waste (Other than Sewage Sludge) on Agricultural Lands".

C-3-1 Sewage Sludge Utilization on Agricultural Lands

C-3-2 Utilization of Waste (Other than Sewage Sludge) on Agricultural Lands

- C-5 *Registration on Title of Certificates of Approval For Waste Disposal Sites*
The guideline covers the registration on title of Certificates of Approval and Provisional Certificates of Approval for existing and new waste disposal sites in which waste is disposed on or in the ground, other than soil conditioning sites. The guideline will be enforced by placing conditions on applicable Certificates of Approval.
- C-7 *Burning at Landfilling Sites*
The primary purpose of this guideline is to provide a set of operational requirements for the orderly burning of segregated clean wood and brush in a safe and environmentally acceptable manner at appropriate landfill sites. The operational requirements are provided in section 4-21, "Open Burning of Waste", of Procedure C-8-1: "Guidance Manual for Landfill Sites Receiving Municipal Waste".
- C-8 *Use of the "Guidance Manual for Landfill Sites Receiving Municipal Waste"*
This guideline authorizes the use of Procedure C-8-1: "Guidance Manual for Landfill Sites Receiving Municipal Waste" in activities involving the design, development, operation and closure of landfill sites receiving municipal waste.
- C-8-1 *Guidance Manual for Landfill Sites Receiving Municipal Waste (1993)*
This document is available from the Program Development Branch, Environmental Sciences and Standards Division.
- C-10 *Removal Procedures at Sites Containing Substantial Quantities of Asbestos Waste*
Provides for the protection of the environment during the removal of asbestos waste from sites designated for redevelopment or other purposes.
- C-13 *Engineered Facilities at Landfills that Receive Municipal and/or Non-Hazardous Wastes*
This guideline sets forth the requirements for engineered facilities at new or expanded landfills during the "contaminating life span" of the landfill.
- C-15 *Decommissioning and Clean-up of Sites*
(under review)
- C-15-1 *Clean-up of Sites in Ontario*
- E-4 *Interim Expansion of Municipal Landfills*
Designed to assist a proponent in preparing a request for an Environmental

Assessment Act exemption for a short-term continuation or expansion of an existing landfill, while longer term waste management projects are being developed.

Land Use Compatibility

D-1

Land Use Compatibility

Identifies the direct interest of the Ministry of the Environment and Energy in recommending separation distances and other control measures for land use planning proposals to prevent or minimize adverse effects from the encroachment of incompatible land uses where a facility either exists or is proposed. This guideline sets the context for all existing and new guidelines relating to land use compatibility.

D-1-1 *Land Use Compatibility: Procedure for Implementation*

D-1-2 *Land Use Compatibility: Specific Applications*

D-1-3 *Land Use Compatibility: Definitions*

D-2

Compatibility Between Sewage Treatment Facilities and Sensitive Land Use
(under review)

D-3

Environmental Considerations for Gas or Oil Pipelines and Facilities

Identifies the environmental interests of the Ministry in proposals for new, expanded or upgraded gas or oil pipelines and facilities in Ontario, which proponents have submitted to the Ontario Energy Board (OEB) and/or the National Energy Board (NEB) for approval. It outlines the environmental considerations that the Ministry advises the OEB and/or the NEB to take into account when they give approval to gas or oil pipelines and facilities under their jurisdiction.

D-4

Land Use on or Near Landfills and Dumps

This guideline specifies restrictions and controls on land use that the Ministry wishes to see implemented in the vicinity of landfills and dumps, in order to protect the health, safety, convenience and welfare of residents near such facilities. It complements existing ministry abatement programs for landfills and dumps, and is a direct application of Guideline D-1: "Land Use Compatibility".

D-4-1 *Assessing Methane Hazards from Landfill Sites*
This procedure is available from the Environmental Planning and Analysis Branch, Conservation and Prevention Division.

D-4-2 *Environmental Warnings/Restrictions*
This procedure is available from the Environmental Planning and Analysis Branch, Conservation and Prevention Division.

D-4-3 *Registration of Certificates and Provisional Certificates*

This procedure is available from the Environmental Planning and Analysis Branch, Conservation and Prevention Division.

Ecological Approach to Planning

Towards An Ecosystem Approach to Land Use Planning

Released in September 1992. Available from the Environmental Planning and Analysis Branch, Conservation and Prevention Division.

Water Management on a Watershed Basis: Implementing an Ecosystem Approach

MOEE/MNR document published in June 1993.

Sub-Watershed Planning Guidelines

MOEE/MNR document published in June 1993.

Integrating Water Management Objectives into Municipal Planning Documents

MOEE/MNR document published in June 1993.

Energy

New Energy Directions, 1990

Throne speech outlining the Provincial Government's commitment to aggressive energy savings and efficiency initiatives.

A Framework for Energy Efficiency and Conservation in Ontario, 1992

Identifies a range of options and tools that may be used to encourage greater investment in energy efficiency.

Infrastructure

F-5 Levels of Treatment for Municipal and Private Sewage Treatment Works Discharging to Surface Waters

Describes the levels of treatment required at municipal and private sewage treatment works discharging to surface waters.

F-5-1 Determination of Treatment Requirements for Municipal and Private Sewage Treatment Works Discharging to Surface Waters

F-5-2 Relaxation of Normal Level of Treatment for Municipal and Private Sewage Treatment Works Discharging to Surface Waters

F-5-3 Derivation of Sewage Treatment Works Effluent Requirements for the Incorporation of Effluent Requirements into Certificates of Approval for New or Expanded Sewage Treatment Works

F-5-4 Effluent Disinfection Requirements for Sewage Works Discharging to Surface Waters

F-6 Sewer and Watermain Installation: Distance Requirements

The purpose of this guideline is to reduce/minimize the potential for health hazards to water users in the event of a watermain or sewer line rupture that could result in contamination of the water distribution system.

F-6-1 Procedures to Govern Separation of Sewers and Watermains

F-7 Minimum Accepted Level of Servicing for Municipally and Privately Owned Communal Systems
(under review)

F-8 Provision and Operation of Phosphorus Removal Facilities at Municipal, Institutional and Private Sewage Treatment Works

This guideline ensures that phosphorous removal facilities are installed and properly operated at municipal, institutional and private sewage treatment works, to minimize problems caused by excessive phosphorus levels in receiving water bodies.

F-8-1 Determination of Phosphorus Removal Requirements for Municipal, Institutional and Private Sewage Treatment Works

F-10 Sampling and Analysis Requirements for Municipal and Private Sewage Treatment Works (Liquid Waste Streams Only)

Describes the MOEE sampling and analysis requirements for municipal and private sewage treatment works (liquid waste streams) for the purpose of assessing performance and compliance with effluent requirements prescribed under Ministry Guideline F-5: "Levels of Treatment for Municipal and Private Sewage Treatment Works Discharging to Surface Waters" and Procedure F-10-1: "Procedures for Sampling and Analysis Requirements for Municipal and Private Sewage Treatment Works (Liquid Waste Streams Only)".

F-10-1 Procedures for Sampling and Analysis Requirements for Municipal and Private Sewage Treatment Works (Liquid Waste Streams Only)

Financial Assurance

F-15

Financial Assurance

Financial Assurance ensures that recipients of orders and approvals issued under the EPA or the OWRA comply with the terms and conditions thereof in a timely manner. It will also ensure that funds are available for future decommissioning, clean-up, rehabilitation and decontamination activities. This guideline can apply to existing operations under certain conditions.

F-15-1

Procedure for Financial Assurance

Noise & Vibration

The following policies with the NPC or LU prefix are found in the Model Municipal Noise By-law

- NPC205 Sound Level Limits for Stationary Sources in Class 1 and Class 2 (Urban Areas)*
Establishes sound level limits for stationary sources in urban areas.
- NPC206 Sound Level Limits due to Road Traffic*
Deals with the establishing of sound level limits due to road traffic.
- NPC207 Impulse Vibration in Residential Buildings*
Provides a method for the assessment of impulse vibration inside occupied residential buildings caused by the operation of stationary source of vibration.
- NPC232 Sound Level Limits for Stationary Sources in Class 3 (Rural) Areas*
Establishes sound level limits for stationary sources in rural areas.
- NPC233 Information to be Submitted for Approval of Stationary Sources*
Details the information on stationary sources to be submitted for EA and EPA approvals.
- LU131 (Originally NPC131) - Noise Assessment Criteria in Land Use Planning*
Deals with the noise assessment of sensitive land uses being planned.

Ground Effect - Interim Position

This is a letter describing MOEE's position on what ground attenuation is acceptable regarding the effect of ground on the propagation of sound over long distances. This letter is available from the Noise Assessment Unit, Approvals Branch, Operations Division.

Hydrocarbon Pipelines - Draft

This guideline is to provide noise control with respect to construction equipment during the construction of hydrocarbon pipelines.

Landfill Sites - Draft

This guideline provides the sound level limits around landfill sites to be observed by the landfill site designers. This guideline is available from the Noise Assessment Unit, Approvals Branch, Operations Division.

Model Municipal Noise Control By-law

This by-law is a description of qualitative and comprehensive noise control models for municipalities to adopt as noise control by-laws. The comprehensive model includes a collection of guidelines for use in EPA and EA approvals that address noise level limits, various sources and other concerns. This modal by-law is available from the Noise Assessment Unit, Approvals Branch, Operations Division.

Several of the '100' series guidelines listed in the Model Municipal Noise Control By-law have been revised. into a '200' series, but are still in draft form. The revised policies are: NPC 205, NPC 207, NPC 232, NPC 233 and LU 131 (see above section).

Miscellaneous

H-5

Public Consultation Guideline

Outlines the public consultation principles of the Ministry of Environment and Energy.

Interim Guide for the Production and Use of Aerobic Compost in Ontario, Nov. 1991

This document provides the MOEE position on the production and use of aerobic compost.

NOISE & VIBRATION PROTOCOLS

The protocols listed below are available from the Noise Assessment Unit, Approvals Branch, Operations Division.

ONTARIO HYDRO PROTOCOL FOR COMMUNITY NOISE CONTROL - JANUARY 1981

This protocol has established sound level limits for various Ontario Hydro facilities (eg. compressors, generating stations).

A PROTOCOL FOR DEALING WITH NOISE CONCERN DURING THE PREPARATION, REVIEW AND EVALUATION OF PROVINCIAL HIGHWAYS, ENVIRONMENT ASSESSMENTS (MOEE-MTO), FEBRUARY 1986

This protocol has established noise level limits and mitigating requirements for the Environmental Assessments of Freeways.

TORONTO TRANSIT COMMISSION PROTOCOLS (TTC)

The MOEE and TTC have developed project specific protocols that establish noise level limits and mitigating requirements for the evaluation of noise impacts of specific projects in the Environmental Assessment.

GO TRANSIT PROTOCOL (UNDER PREPARATION)

This protocol is expected to be similar to the MTO and TTC protocols.

MODELS

Air

The following models have been considered acceptable by MOEE. Different models exist for different types of sources. Other models are acceptable if the proponent can show that the model is appropriate and effective. Dispersion models: Reg. 346 - Appendix for 1/2 hour average; CAP; PAL; ISC; FDM; CALINE 4.A and HIWAY-2; CAL3QHC. Emission models: Mobile; AP-42 Emission Factors; XATEF Database, VOC/PM Speciation Database, Water 7, Scholl Canyon Landfill Gas Model, Chemdat 7. Proponents are encouraged to discuss the appropriate models with MOEE's Science and Technology Branch.

Noise & Vibration

The following models are available from the Noise Assessment Unit, Approvals Branch, Operations Division.

Stamson

This computer prediction model is used to assess the effects of future roadway and railway traffic noise on residential land use.

Ornament is the written description of the Stamson computer model.

Stormwater

Various impact prediction models exist for different types of analysis. Proponents are encouraged to discuss the appropriate model(s) with MOEE's Regional staff and the Environmental Science and Standards Division.

Water & Waste Water

Various impact prediction models exist for different types of analysis. Proponents are encouraged to discuss the appropriate model(s) with MOEE's Regional staff.

APPENDIX 2

MOEE'S ORGANIZATION CHART

APPENDIX 2

MOEE'S ORGANIZATION CHART

The Conservation & Prevention Division

This Division includes the *EA Branch*, the *Community Conservation Branch*, the *Industry Conservation Branch*, the *Waste Reduction Branch*, the *Green Industries Office* and the *Environmental Planning and Analysis Branch*.

Of these branches, only the *Environmental Planning and Analysis Branch* is involved in the technical review of EAs. The *Environmental Planning and Analysis Branch* is responsible for identifying and responding to overall trends and future directions in the areas of prevention and conservation. As well, this Branch is also responsible for the coordination of the Ministry's technical review of EAs as outlined in section 3.1 of this Guideline, the Ministry's Land Use Plan Review program, and the Niagara Escarpment Plan Review Program. The *Environmental Planning and Analysis Branch* performs the corporate planning function for the Ministry by conducting policy and guideline development; researching special projects that may require contact with other areas of the government or other agencies; and, developing a corporate position on environmental and land use planning matters.

The Environmental Sciences and Standards Division

This Division is responsible for providing scientific, technical, standards setting and laboratory support services, and for developing programs dealing with pollution prevention, waste management, air, acid rain, hazardous contaminants, and water resources, for the protection of the ecosystem and human health within a multi-media context.

The following Branches are involved in the Ministry's technical review of EAs.

- The *Science and Technology Branch* provides the Ministry with scientific and technological information to define and support the Ministry's programs and policies.
- The *Environmental Monitoring and Reporting Branch* is the repository for all of the environmental data collected by and for the Division.
- The *Program Development Branch* develops programs to address the Ministry's priorities and provides support for the implementation of existing programs.
- The *Standards Development Branch* sets standards for contaminants discharged into the environment.

The Operations Division

As the representative of the Ministry in the field, the Operations Division carries out a wide range of

activities, from prevention to enforcement. These activities are geared towards the development, delivery and management of programs aimed at preventing pollution and enhancing the quality of the environment.

The key units involved in the technical review of environmental assessments are the Regional and District Offices, and the *Approvals Branch*.

As discussed in Section 3.1, the *Approvals Branch* coordinates the Ministry's Technical Review of EAs on waste management, waterworks, and sewage works projects.

The *Regions and Districts* review all EAs and are key sources of information for proponents.

The Policy Division

This Division identifies strategic issues, coordinates policy development, and coordinates and integrates action by the Ministry and other governments, nationally and internationally.

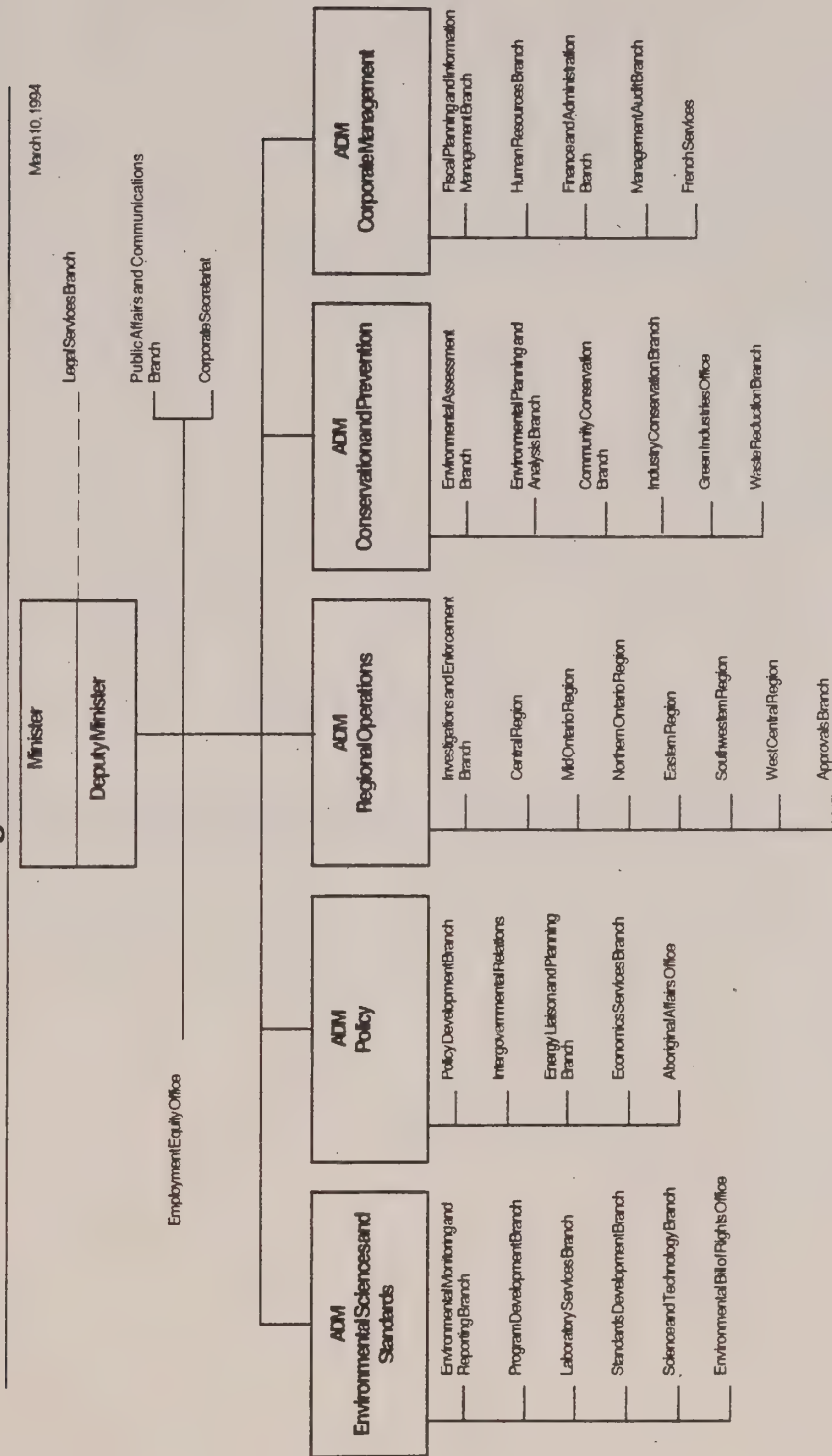
The *Energy Liaison and Planning Branch* is involved in the technical review of most EAs and conducts their review with respect to the implications the EA may have for the supply, distribution and pricing of energy resources.

The *Intergovernmental Affairs Office* reviews undertakings that have the potential to impact the environment of neighbouring jurisdictions.

The *Aboriginal Affairs Office* reviews undertakings that have the potential to impact the environment of native people.

Ontario Ministry of Environment and Energy

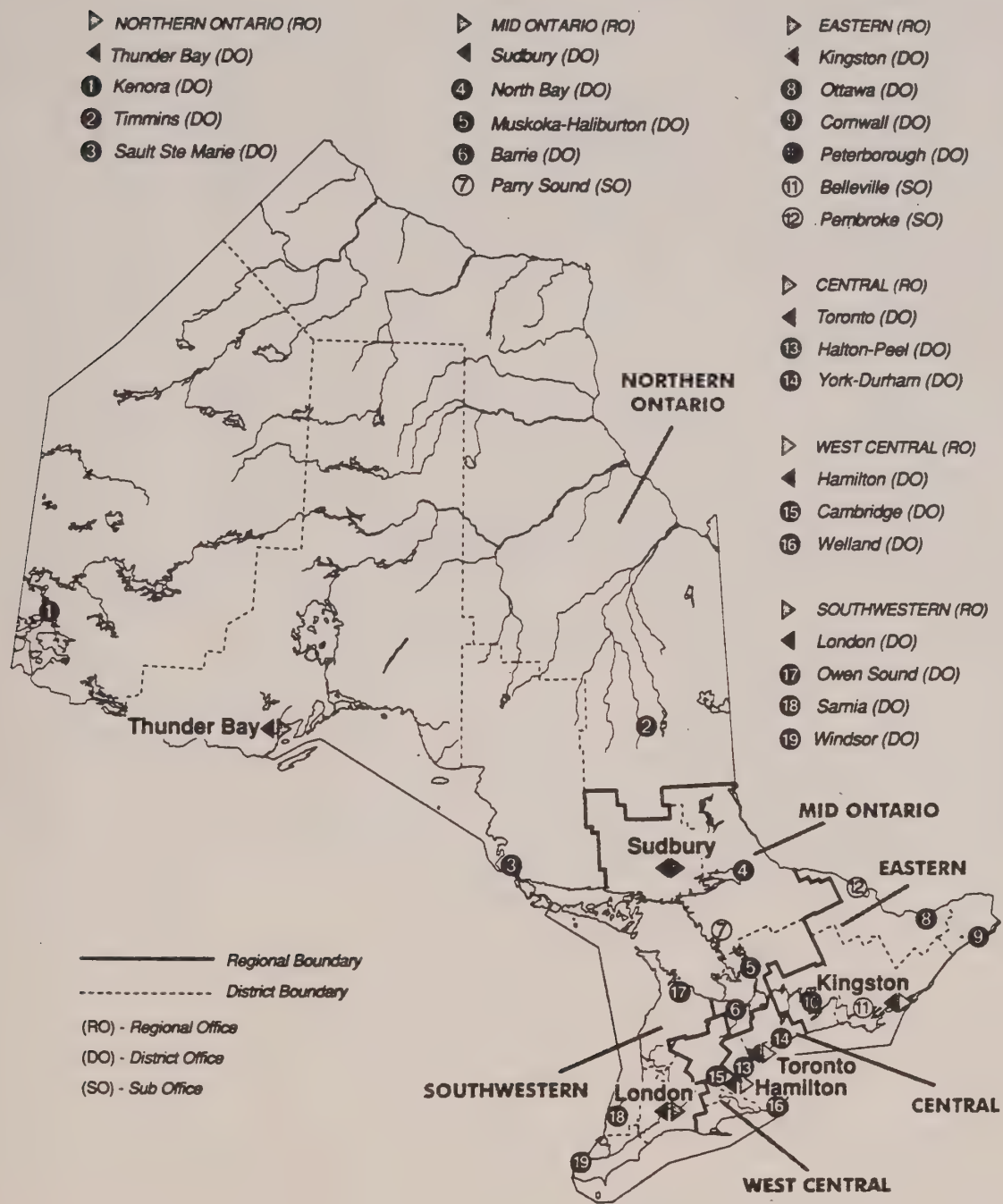
Organizational Chart



APPENDIX 3

MOEE'S REGIONAL BOUNDARIES

MOEE'S REGIONAL BOUNDARIES



APPENDIX 4

MOEE CONTACTS

APPENDIX 4

MOEE CONTACTS

Pre-submission consultation contacts for individual EAs regarding waterworks and sewage works should be directed to:

Manager
Municipal Approvals
Approvals Branch
Ministry of Environment and Energy
3rd Floor, 250 Davisville Ave.
Toronto, Ontario
M4S 1H2
Phone (416) 440-3713
Fax (416) 440-6973

Pre-submission consultation contacts for individual EAs for waste sites and systems should be directed to:

Supervisor
Waste Sites & Systems
Approvals Branch
Ministry of Environment and Energy
3rd Floor, 250 Davisville Ave.
Toronto, Ontario
M4S 1H2
Phone (416) 440-3544
Fax (416) 440-6973

Pre-submission consultation contacts for individual EAs for all other projects (including transportation, parks, and electricity generation and transmission projects) should be directed to:

Manager
Environmental Planning
Environmental Planning and Analysis Branch
Ministry of Environment and Energy
3rd Floor, 250 Davisville Ave.
Toronto, Ontario
M4S 1H2
Phone (416) 440-3739
Fax (416) 440-7039

The Regional EA contacts for undertakings being planned under approved Parent Class EAs are:

Supervisor
Approvals and Planning Unit
Ministry of Environment and
Energy
7 Overlea Blvd., 4th Fl.
Toronto, Ontario
M4H 1A8
Phone (416) 424-3000
Fax (416) 325-6345

EA Evaluator
Approvals and Planning Unit
Southwestern Region
Ministry of Environment and Energy
985 Adelaide St. South
London, Ontario
N6E 1V3
Phone (519) 661-2223
Fax (519) 661-1742

EA Evaluator
Approvals and Planning Unit
Eastern Region
Ministry of Environment and
Energy
133 Dalton Ave.
Kingston, Ontario
K7L 4X6
Phone (613) 549-4000
Fax (613) 548-6908

Supervisor
Approvals and Planning Unit
Northern Region
Ministry of Environment and Energy
P.O. Box 5000
3rd Floor, 435 James St. S.
Thunder Bay, Ontario
P7C 5G6
Phone (807) 475-1710
Fax (807) 475-1754

Supervisor
Approvals and Planning Unit
Mid-Ontario Region
Ministry of Environment and
Energy
11th Floor, 199 Larch St.
Sudbury, Ontario
P3E 5P9
Phone (705) 670-3234
Fax (705) 675-4180

EA Evaluator
Approvals & Planning Unit
West Central Region
Ministry of Environment and Energy
P.O. Box 2112
119 King St. West, 12th Fl.
Hamilton, Ontario
L8N 3Z9
Phone (905) 521-7715
Fax (905) 521-1601

For information concerning the administration of the EA Act, proponents should contact:

Director
Environmental Assessment Branch
Ministry of Environment and Energy
5th Floor, 250 Davisville Ave.
Toronto, Ontario
M4S 1H2
Phone (416) 440-3450 Fax (416) 440-3771

For information concerning the administration of the Environmental Bill of Rights Act, proponents should contact:

Manager
Environmental Bill of Rights Office
Ministry of Environment and Energy
14th Floor, 2 St. Clair Avenue West
Toronto, Ontario M4V 1L5
Phone (416) 323-5200

